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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,208	06/25/2003	Vincent C. Martling	PSM-128	2686

29482 7590 02/17/2006

POWER SYSTEMS MANUFACTURING
1440 WEST INDIANTOWN ROAD
SUITE 200
JUPITER, FL 33458

EXAMINER

KIM, TAE JUN

ART UNIT PAPER NUMBER

3746

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,208

Applicant(s)

MARTLING ET AL.

Examiner

Ted Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donlan (5,361,578) in view of Cheng (6,418,724) and optionally either Cole (4,268,017) or Richardson (2,306,141). Donlan teaches the fuel nozzle assembly comprising: a first fuel inlet 16 in fluid communication with a first fuel passage 18 and first fuel injection means 28 for supplying a first fuel to a combustor; a steam inlet 17 in fluid communication with a steam passage 19 and steam injection means 31 for supplying steam to a combustor; an air passage 32 and air injection means 30 for supplying air (col. 3, lines 58+) to a combustor; a second fuel inlet 37 in fluid communication with a second fuel passage and second fuel injection means at the end of 38 for supplying a second fuel to a combustor; said first fuel inlet supplies a gaseous fuel to said first fuel passage and said second fuel inlet supplies a liquid fuel to said second fuel passage; said second fuel passage is located along a center axis of said fuel nozzle assembly; said air passage 32 is located radially outward of said second fuel passage 38; wherein said steam passage and said steam injection means are located radially outward of said air passage; said first fuel passage and said first fuel injection means are located radially outward of said steam passage.

Donlan does not teach a means to regulate a steam supply at said steam inlet. Cheng is cited to show that is old and well known in the art to employ a means to regulate steam A (see Fig. 11) A via a means for metering 105 prior to entering the fuel nozzle. Note that the symbol used for the meter 105 is well recognized in the art as that of an orifice plate. Furthermore, Fig. 13 shows the steam at the left side of the Figure entering a 2" orifice for metering. It would have been obvious to one of ordinary skill in the art to employ a metering plate/orifice as taught by Cheng prior to entering the steam inlet. As for the location at the steam inlet, this is regarded as being with the ordinary skill in the art, as an obvious matter of making the metering means and the inlet integral, where the ability to make integral has been held to be within the ordinary skill in the art, *in re Larson*, 144 USPQ 347 (CCPA 1965), *In re Lockhart*, 90 USPQ 214 (CCPQ 1951). It would have been obvious to one of ordinary skill in the art to make the metering means and the inlet integral, as being within the ordinary skill in the art as established by case law.

Alternately, Cole is cited to show a fuel injector with steam passage 13 with orifice 20 at the inlet. Richardson is cited to show a fuel injector with steam inlet with a valve at the inlet 27. As for the location at the steam inlet, this is regarded as being with the ordinary skill in the art, as suggested by either Cole or Richardson, to place either an orifice or other valving at the steam inlet to the fuel injector. As for the orifice diameter being 0.25 inches this is regarded as an obvious matter of finding the workable ranges in the art. It would have been obvious to one of ordinary skill in the art to employ the claimed range, as an obvious matter of finding the workable ranges in the art.

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donlan (5,361,578) in view of Fetescu et al (5,727,377) and optionally either Cole (4,268,017) or Richardson (2,306,141). Donlan teaches the fuel nozzle assembly with the entirety of the claimed structure and its detailed teachings are listed above. Donlan does not teach a means to regulate a steam supply at said steam inlet. Fetescu et al is cited to show that is old and well known in the art to employ a means to regulate steam 23 via a means for metering 22/flow orifice prior to entering the combustion chamber 43. Note that the symbol used for the meter 22 is well recognized in the art as that of an orifice plate (compare with Cheng). It would have been obvious to one of ordinary skill in the art to employ a metering plate/orifice as taught by Fetescu et al prior to entering the steam inlet. As for the location at the steam inlet, this is regarded as being with the ordinary skill in the art, as an obvious matter of making the metering means and the inlet integral, where the ability to make integral has been held to be within the ordinary skill in the art, *in re Larson*, 144 USPQ 347 (CCPA 1965), *In re Lockhart*, 90 USPQ 214 (CCPQ 1951). It would have been obvious to one of ordinary skill in the art to make the metering means and the inlet integral, as being within the ordinary skill in the art as established by case law. Alternately, Cole is cited to show a fuel injector with steam passage 13 with orifice 20 at the inlet. Richardson is cited to show a fuel injector with steam inlet with a valve at the inlet 27. As for the location at the steam inlet, this is regarded as being with the ordinary skill in the art, as suggested by either Cole or Richardson, to place either an orifice or other valving at the steam inlet to the fuel injector. As for the orifice diameter

being 0.25 inches this is regarded as an obvious matter of finding the workable ranges in the art. It would have been obvious to one of ordinary skill in the art to employ the claimed range, as an obvious matter of finding the workable ranges in the art.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donlan (5,361,578) in view of Waldherr et al (6,311,471) and optionally either Cole (4,268,017) or Richardson (2,306,141). Donlan teaches the fuel nozzle assembly with the entirety of the claimed structure and its detailed teachings are listed above. Donlan further teaches that deterioration of the fuel nozzle due to the burning and erosion from exposure to the hot combustion gases is a common problem (col. 1, lines 36+). Donlan does not teach a means to regulate a steam supply at said steam inlet. Waldherr et al is cited to show that is old and well known in the art to employ a means to regulate steam 42 (Fig. 2) via a means for metering 22/flow orifice metering plate prior to entering the combustion chamber fuel injector 44 where the steam serves to cool the injector as well as being injected into the combustor (see Figs. 2 or 3) and that the orifice serves to expand the steam and enhances its cooling effectiveness (col. 4, lines 17+). It would have been obvious to one of ordinary skill in the art to employ a metering plate/orifice as taught by Waldherr et al prior to entering the steam inlet, in order to enhance the cooling effectiveness of the steam and thus help prevent nozzle deterioration from burning and erosion from exposure to the hot combustion gases. As for the location at the steam inlet, this is regarded as being with the ordinary skill in the art, as an obvious matter of making the metering means and the inlet integral, where the ability to make integral has been held to

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be within the ordinary skill in the art, *in re Larson*, 144 USPQ 347 (CCPA 1965), *In re Lockhart*, 90 USPQ 214 (CCPQ 1951). It would have been obvious to one of ordinary skill in the art to make the metering means and the inlet integral, as being within the ordinary skill in the art as established by case law. Alternately, Cole is cited to show a fuel injector with steam passage 13 with orifice 20 at the inlet. Richardson is cited to show a fuel injector with steam inlet with a valve at the inlet 27. As for the location at the steam inlet, this is regarded as being with the ordinary skill in the art, as suggested by either Cole or Richardson, to place either an orifice or other valving at the steam inlet to the fuel injector. As for the orifice diameter being 0.25 inches this is regarded as an obvious matter of finding the workable ranges in the art. It would have been obvious to one of ordinary skill in the art to employ the claimed range, as an obvious matter of finding the workable ranges in the art.

Allowable Subject Matter

5. Claims 10, 11 are allowed.

Contact Information

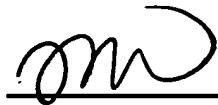
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are

571-273-8300 for Regular faxes and 571-273-8300 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>



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